

Title (en)
EXPOSURE APPARATUS AND METHOD OF MANUFACTURING ARTICLE

Title (de)
BELICHTUNGSVORRICHTUNG UND VERFAHREN ZUR HERSTELLUNG EINES ARTIKELS

Title (fr)
APPAREIL D'EXPOSITION ET PROCÉDÉ DE FABRICATION D'ARTICLE

Publication
EP 3599511 A1 20200129 (EN)

Application
EP 19185935 A 20190712

Priority
JP 2018138014 A 20180723

Abstract (en)
The present invention provides an exposure apparatus for exposing a substrate, including: an optical system (30) including a barrel (31) and an optical element (32) arranged in the barrel; and an adjustment unit (60) including a heat radiator (61) and configured to adjust imaging characteristics of the optical system by applying heat to the optical element from the heat radiator, wherein the heat radiator is a member including a first end portion (61a) and a second end portion (61b) on a side opposite to the first end portion and having a variation in physical properties falling within a predetermined range, a central portion (61c) between the first end portion and the second end portion of the heat radiator is arranged inside the barrel, and the first end portion and the second end portion of the heat radiator are arranged outside the barrel.

IPC 8 full level
G03F 7/20 (2006.01)

CPC (source: CN EP KR US)
G03F 7/20 (2013.01 - KR); **G03F 7/7015** (2013.01 - KR US); **G03F 7/70258** (2013.01 - CN KR); **G03F 7/70433** (2013.01 - CN); **G03F 7/70891** (2013.01 - CN EP); **G03F 7/70991** (2013.01 - EP)

Citation (applicant)
JP 2007317847 A 20071206 - NIKON CORP

Citation (search report)
• [XDAI] JP 2007317847 A 20071206 - NIKON CORP
• [A] US 2013141707 A1 20130606 - BAER NORMAN [DE], et al
• [A] EP 1376185 A2 20040102 - NIKON CORP [JP]
• [A] JP 2011048126 A 20110310 - NIKON CORP

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3599511 A1 20200129; CN 110750035 A 20200204; JP 2020016709 A 20200130; JP 7208728 B2 20230119; KR 102542257 B1 20230612; KR 20200011011 A 20200131; TW 202008426 A 20200216; TW I787528 B 20221221; US 10845708 B2 20201124; US 2020026197 A1 20200123

DOCDB simple family (application)
EP 19185935 A 20190712; CN 201910663683 A 20190723; JP 2018138014 A 20180723; KR 20190083043 A 20190710; TW 108124474 A 20190711; US 201916515467 A 20190718